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IS 14253 (1995): Educational Instruments and Equipment - Wire Gauze for School and Laboratory Use [PGD 22: Educational Instruments and Equipment]

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Indian Standard

EDUCATIONAL INSTRUMENTS AND EQUIPMENT — WIRE GAUZE FOR SCHOOL AND LABORATORY USE — SPECIFICATION

UDC 677·532 : 542·2 : 371·6

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

April 1995 **Price Group 2**

Educational Instruments and Equipment Sectional Committee, LM 22

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Educational Instruments and Equipment Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

Based on the recommendation of 'National Policy on Education' the scheme entitled 'Operation Black Board' specifies certain minimum facilities to be provided to all the schools in the country. As a primary science kit, wire gauze is one of the items, which is to be provided to all the primary, middle and secondary schools. Besides this, the product is also used in laboratories in colleges and test houses and test laboratories of the industries.

This standard not only specifies the different types of wire gauzes in use but also provides detailed information regarding dimensions and materials for different sizes.

This standard also draws attention to use of wire gauzes with ceramic centres. It may be mentioned that such wire gauzes will have longer life. While the details of ceramic centre may be agreed to between the purchaser and the manufacturer, other areas of construction shall be covered by this standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

EDUCATIONAL INSTRUMENTS AND EQUIPMENT — WIRE GAUZE FOR SCHOOL AND LABORATORY USE — SPECIFICATION

1 SCOPE

This standard covers two types of wire gauze grids suitable for use in laboratories.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard:

IS No.	*Title*
280 : 1979	Mild steel wire for general engineering purposes
1568 : 1970	Specification for wire cloth for general purposes
4826 : 1979	Hot-dipped galvanized coatings on round steel wires
6528 : 1972	Stainless steel wire

3 TERMINOLOGY

3.0 For the purpose of this standard the following definitions shall apply.

3.1 Warp

All wires running lengthwise of the wire gauze grid as woven.

3.2 Weft

All wires running crosswise of the wire gauze grid as woven.

3.3 Type of Weave

The way in which warp and weft wires cross each other.

3.4 Plain Weave

Weave in which every warp wire crosses alternately above and below every weft wire and *vice versa* as shown in Fig. 1.

3.5 Aperture Size

The width of the clear space between successive wires measured at the centre line of the aperture as shown in Fig. 1.

4 TYPES

The wire gauzes used in laboratories shall be of the following types:

- Type I — Wire gauze, grid, plain
  - Grade A — Nickel-chromium alloy (without any iron content)
- Type II — Wire gauze grid with asbestos centre patch
  - Grade B — Corrosion resisting steel
  - Grade C — Carbon steel, galvanized
- Type III — Wire gauze, grid with ceramic centre

5 MATERIALS

5.1 The material for nickel-chromium alloy wire for Type I, Grade A wire gauze shall be as follows:

Nickel = 80 percent
Chromium = 20 percent

The nickel-chromium alloy shall be free from iron.

5.2 The material for corrosion-resisting steel wire for Type II, Grade B wire gauze shall be as given in IS 6528 : 1972.

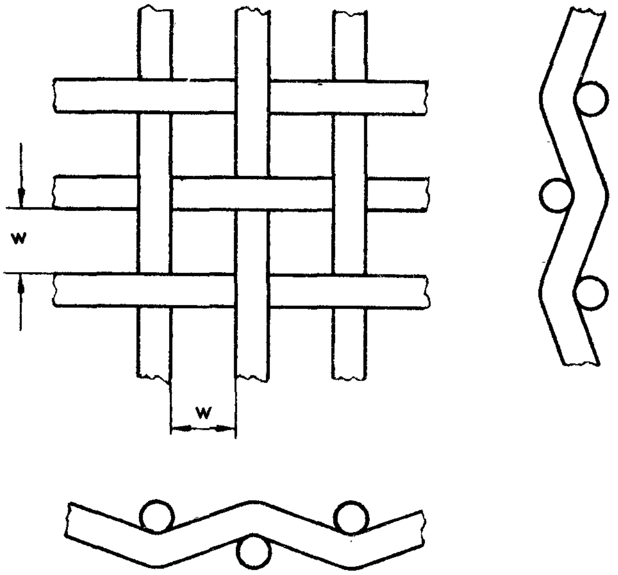
5.3 The material for carbon steel wire for Type II, Grade C wire gauze shall conform to IS 280 : 1979.

6 DIMENSIONS

6.1 The wire gauze made from steel may be manufactured from the wire cloth, conforming to IS 1568 : 1970. Wire gauze shall be square in shape having the following sizes:

Size 1 = 100 mm × 100 mm
Size 2 = 130 mm × 130 mm
Size 3 = 160 mm × 160 mm

6.2 The wire diameter (d), diameter and thickness of the asbestos patch and size of the wire gauze for different grades along with the aperture size shall be as given in Table 1.



w = Aperture width

FIG. 1 PLAIN WEAVE

7 CONSTRUCTION

7.1 The wire gauze shall have plain weave and be regularly woven with equally spaced parallel wires in both warp and weft directions to produce uniform square meshes or openings. The width of aperture for the various grades of the wire gauze are given in Table 1.

7.2 For wire gauzes with asbestos centre a sufficient amount and thickness of asbestos shall be pressed into the wire mesh to a degree which will ensure its retention for the entire life of the wire grid. Dimension shall conform to the requirements of Table 1.

7.3 Wire gauzes with ceramic centre may also be used and the details of the ceramic centre may be agreed upon between the purchaser and the manufacturer.

8 FINISH

8.1 Zinc Coating

The zinc coating on individual wires which make up the various wire gauze should be

Table 1 Dimensions of Wire Gauze

(*Clauses* 6.2, 7.1 *and* 7.2)

All dimensions in millimetres.

Type	Grade	Dimension ± 3	Wire Diameter	Asbestos Patch Dia	Asbestos Patch Thickness ±0·25	Width of Aperture *w*
I	A	100	0·5 ± 0·03	—	—	The width of aperture shall be between 1·0 to 1·7 mm
II	C	100	Between 0·400 and 0·560	76 ± 3	1·0	
II	C	130	do	76 ± 3	1·0	
I	A	160	0·5 ± 0·03	—	—	
II	C	160	Between 0·400 and 0·560	90 ± 4	1·0	
II	B	160	0·6 ± 0·03	90 ± 4	1·25	

NOTE — All edges shall be folded under 10 mm *Min*, on each edge.

medium coated and shall be in accordance to Table 2 of IS 4826 : 1979 which specifies the requirements for medium coated galvanized wires.

8.2 The wire gauze shall be free of damage, such as broken wires, holes, dents or distortion which impairs its serviceability or use.

9 DESIGNATION

9.1 Wire gauzes shall be designated by the following:

a) Type,
b) Grade,
c) Size, and
d) Reference to this Indian Standard.

Example:

Wire gauzes of Type I, Grade A and size 100 mm × 100 mm shall be designated as:

Wire Gauze I — A — 100 IS 14253

10 MARKING

10.1 Each packet of wire gauzes shall be legibly and indelibly marked with the following information:

a) Name of the manufacturer;
b) Trade-mark of manufacturer, if any;
c) Batch No; and
d) Designation.

10.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

10.2.1 The use of the Standard Mark is governed by the provisions of Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

11 PACKING

11.1 The wire gauzes shall be packed in a tamper proof packing, containing 50 pieces in a packet as agreed to between the purchaser and the supplier. However, provision of Packaged Commodities Rules, 1977 shall predominate.